

World Coal Quality Inventory: Status of Countries

WoCQI NEWS

Issue 3 August 1, 2001

Keeping you informed about the USGS World Coal Quality Inventory

Introduction

Welcome back to WoCQI (World Coal Quality Inventory) News, issue number 3. Note that the newsletter banner indicates project status worldwide, which has again progressed since the February newsletter.

This newsletter highlights two features: 1) the upcoming scientific meeting, "Coal Quality: Global Priorities" hosted at the U.S. Geological Survey, Reston, Virginia and 2) the soon-to-be-released CD-ROM of coal-related GIS data for Russia.

The USGS fact sheet describing the World Coal Quality Inventory is now available in both English (FS-155-00) and Spanish (FS-058-01). If you are interested in obtaining copies, contact Bob Finkelman at rbf@usgs.gov.

Please note that future newsletters will be posted on the WoCQI website (<http://energy.er.usgs.gov/wocqi/index.html>). You will be notified by e-mail when it is posted.

Featured Story: Coal Quality: Global Priorities Conference

Conference - Workshop - Short Courses - Field Trip

September 24-26, 2001

*U.S. Geological Survey 12201 Sunrise Valley Drive Reston,
VA*

World coal trade is a growing multibillion-dollar industry. The importance of the economic and environmental consequences of coal use is increasing directly with global population, urbanization, and industrialization. U.S. companies are expanding investments in foreign coal-burning electric generating utilities and in overseas coal mining ventures.

The value of world coal trade is expected to increase significantly during the next several decades.

Though the value of coal in the marketplace is largely determined by its quality, we have measured coal quality in much the same way for the past 100 years. Should we modernize the way we measure and evaluate coal quality? Should more and/or different parameters be considered? Should we develop an entirely different system and attempt to standardize it? These are some of the issues that the conference will attempt to answer.

The U.S. Geological Survey is hosting a conference, workshop and short courses to identify key coal quality issues and to seek solutions. Plenary speakers will address issues such as: coal quality concerns of exporting countries; coal quality concerns of importing countries; mining and combustion issues, etc. Break-out sessions will address:

- Global or Regional Coal Characterization Protocols
- Development of Modern Coal Quality Databases
- Coal characterization and beneficiation
- Characterization of Coal for Byproduct Use and Disposal
- Characterization of Coal for Technological Performance
- Environmental Aspects, Including Air and Water Quality Issues.

The recommendations from these breakout sessions may help to guide advances in coal characterization. There will be poster displays and computer demonstrations of current activities and coal quality characterization in major coal producing regions. Proposed short courses are:

- Coal Quality Characterization: Analytical Methods
- The use of ASTM standards
- Modes of Occurrence of Trace Elements in Coal
- Health Impacts of coal: Should We Be Concerned?

Registration: \$150 prior to August 15, 2001, \$200 thereafter.
The registration includes a dinner, refreshments, a field trip, short courses
and a CD-ROM with the proceedings.
If interested reply to: kdennen@usgs.gov, 703-648-6487 Visit the URL:
energy.er.usgs.gov/wocqi/

Program Schedule

Time	Monday September. 24	Tuesday September. 25	Wednesday September. 26
0800	Registration & Coffee		
0900	Introductions	Panel Review & Discussion	Short Courses II
1000	Refreshments*	Refreshments*	Short Courses II (cont.)
1015	Oral Presentations	Break Out Sessions II	Short Courses II (cont.)
1200	Lunch*	Lunch*	Lunch*
1300	Oral Presentations	Panel Review & Discussion	Tour
1400	Oral Presentations (cont.)	Refreshments*	of
1415	Oral Presentations (cont.)	Short Courses I	USGS
1515	Refreshments*	Short Courses I (cont.)	Evening Free
1530	Break Out Sessions I	Evening Free	
1730	Regional Poster Sessions		
1830	Buffet Dinner*		

Introductory Speakers include: **Chip Groat** (USGS Director), **Pat Leahy** (Associate Director for Geology or **Richard Calnan**, Chief, International Programs), **Suzanne Weedman** or **Ione Taylor** (USGS Energy Program speaking on current USGS activities), and **Bob Finkelman** (WoCQI project chief speaking on purpose and objectives of the project and meeting).

Thursday, September 27 Tours:

A guided tour of the Mirant coal-burning power plant near National Airport will be in the morning: This plant was built 40 years ago, but has been modernized to meet the current clean coal consumption requirements of the Environmental Protection Agency. The coal testing and analysis lab at the plant will also be visited.

A tour of Washington, DC will be arranged for international visitors in the afternoon.

Poster Sessions

Posters will be displayed in the hallway outside the auditorium for the entire length of the meeting. Regional coordinators and/or poster presenters should be at the posters during the pre-dinner period on the first day. Attendees who would like to display a theme-appropriate poster should contact the organizers.

Presentations

Specialists are being invited to give presentations (25 minutes each) on the coal quality issues of particular interest to them. Invited speakers include:

Robert Davidson, International Energy Agency, London

Characterizing Coals for Environmental Quality

Rosemary Falcon, University of the Witwatersrand, South Africa

Title to be Announced

Larry Ruth, U.S. Department of Energy, Pittsburgh, PA

Vision 21: Technology Roadmap for Future of Coal

Jianxiong Mao, Tsinghua University, Beijing, P.R. China

*Coal Quality, the Key Factor to Effect on Energy Utilization Efficiency
And Environmental Emissions in China*

Dave O'Connor, The Electric Power Research Institute, Palo Alto, CA

Coal Quality Requirements for Next Generation Power Production

Mark Earley, Barlow Jonker Pty Ltd., Sydney, Australia

Australian Coal Export Issues

Valery Kotchetkov, Cherno-ovo Scientific Center, Siberian Branch of the

Russian Academy of Sciences *Title to be Announced*

Break Out Sessions

Coal Characterization Protocols: Are new characterization methods necessary to address current technological and environmental issues? If so, what might they be? A facilitator will attend each discussion group and direct the discussion.

Topics include:

- (1) Global or Regional Coal Characterization Protocols.** Are coals from different regions of the world sufficiently unique to warrant different systems of characterization? What are the unique aspects? How do they affect performance?
- (2) Development of Modern Coal Quality Databases.** What are the parameters and methodology necessary for a coal quality database that addresses current and future issues? What is the best way to provide visualization of the data?
- (3) Coal Characterization and Beneficiation.** What types of field description and coal quality characterization would be desirable to develop efficient coal blending, selective mining and beneficiation practices?
- (4) Characterization of Coal for Byproduct Use and Disposal.** What are the parameters necessary to evaluate the use of coal for coke production and byproduct generation? What parameters are necessary to anticipate the characteristics, use, and disposal behavior of coal combustion byproducts?
- (5) Characterization of Coal for Technological Performance.** What parameters are needed to determine the behavior of coal in modern and future coal combustion systems?
- (6) Environmental Aspects, Including Air and Water Quality Issues.** What factors need to be determined to assess the emissions of SO₂, NO_x, trace elements (e.g. Hg), CO₂, etc.? What methods should be used to identify deleterious components (trace elements, acids, organic compounds) leached from coal, coal cleaning and coal combustion byproducts?

Short Courses

- (1) Coal Quality Characterization: Analytical Methods.** This short course will provide information on the characterization and analysis of coal. There will be a description of methodologies used to characterize coal in the field. This will be followed by discussions of the current methods for chemical characterization of coal including Inductively Coupled Atomic Emission Spectroscopy and Mass Spectroscopy, Instrumental Neutron Activation Analysis, and X-Ray Fluorescence Analysis. There will be a brief tour of USGS analytical laboratories.
- (2) The Use of ASTM Standards.** ASTM Standards for coal testing are some of the most widely used standards in the world and are constantly reviewed and updated. New standards are developed in response to needs in both the coal industry and scientific research. The course will cover the use and significance of ASTM Standards, present new standards in development, and discuss the interpretation of data to best approximate true values.
- (3) Modes of Occurrence of Trace Elements in Coal.** This short course will focus on what is known about the modes of occurrence of trace elements in coal. Emphasis will be placed on those elements of technological, economic, and environmental significance.

We will review the current state of knowledge and describe state-of-the-art methods for quantifying the modes of occurrence.

(4) Heath Impacts of Coal: Should We Be Concerned? This short course will sort out the facts and fallacies that have been interwoven in this sensitive issue. We will explore questions such as: Are there confirmed cases of health problems? Under what conditions would coal present a threat to human health? What properties of coal are most dangerous? What can the coal science community do about it?

REMINDER: Aug. 15 is the deadline for the discounted registration (\$150) for the *Coal Quality: Global Priorities* meeting being held at the U.S. Geological Survey in Reston, VA, September 24-26, 2001. See registration form within this newsletter, or visit the meeting website at <http://energy.er.usgs.gov/wocqi/> for more detailed information.

PLEASE SEE THE END OF THE NEWSLETTER FOR A CONFERENCE REGISTRATION FORM

Featured Story: Coal Quality and Resources of the Former Soviet Union

By Mick Brownfield

An ArcView Project

U.S. Geological Survey Open-File Report 01-104

The U.S. Geological Survey (USGS), the Committee on Geology of the Use of Subsurface Resources of the Russian Federation (ROSKOMNEDRA), and the Russian Academy of Sciences (RAS) signed a Memorandum of Understanding (MOU) on Cooperation in Geoscience. The USGS, the Vernadsky State Geologic Museum (VSGM) representing the ROSKOMNEDRA, and the RAS collaborated to produce a dynamic Geographic Information System (GIS) publication that contains information on geology, resources, and quality of coal from the Former Soviet Union (FSU).

The purpose of the GIS project is to integrate views of the geology, coal basins and deposits by coal rank, coal reserves and resource categories, rail lines, rivers, and roads of the FSU utilizing Environmental Systems Research Institute, Inc. (ESRI) ArcInfo and ArcView software. The Russian coauthors supplied ArcInfo files that were modified by the USGS and combined with USGS data files to create an ArcView project. Coal deposit data were selected from monographs, reference books, and unpublished sources of data that were reviewed and deemed reliable by the authors. The database includes more than 265 coal deposit data points with information on the deposit name, location, age, and rank; coal reserve and resource reliability categories are listed for 671 coal-bearing areas in the FSU.

Within the boundaries of the FSU there are hundreds of coal deposits (figs. 1 and 2) that contain as much as 40 to 50 percent of the Earth's total coal resources. Russia is the sixth largest coal producer in the world with a total coal production of 163 million metric tons (World Coal Institute, 2000) and coal exports of less than 27 million metric

tons in 1999 (Knapp, 2000). Coal deposits in the FSU formed under diverse geochemical and climatic conditions and have undergone various structural histories, and are found in eight geological periods: Devonian, Carboniferous, Permian, Triassic, Jurassic, Cretaceous, Paleogene and Neogene. Because of this diversity the coal quality shows wide ranges in composition.

Coal samples included in the coal sample point database were selected from the most reliable sources of data critically reviewed by the Russian coauthors. Coal quality and chemical analyses are included for 180 coal samples (fig. 2) with information on deposit name, location, age, rank, mine name and operator, lithology of coal-bearing rocks, proximate and ultimate analyses, mineral composition, and major-, minor-, and trace-element content. This is the most comprehensive study to date compiled by the USGS of the coal in the FSU.

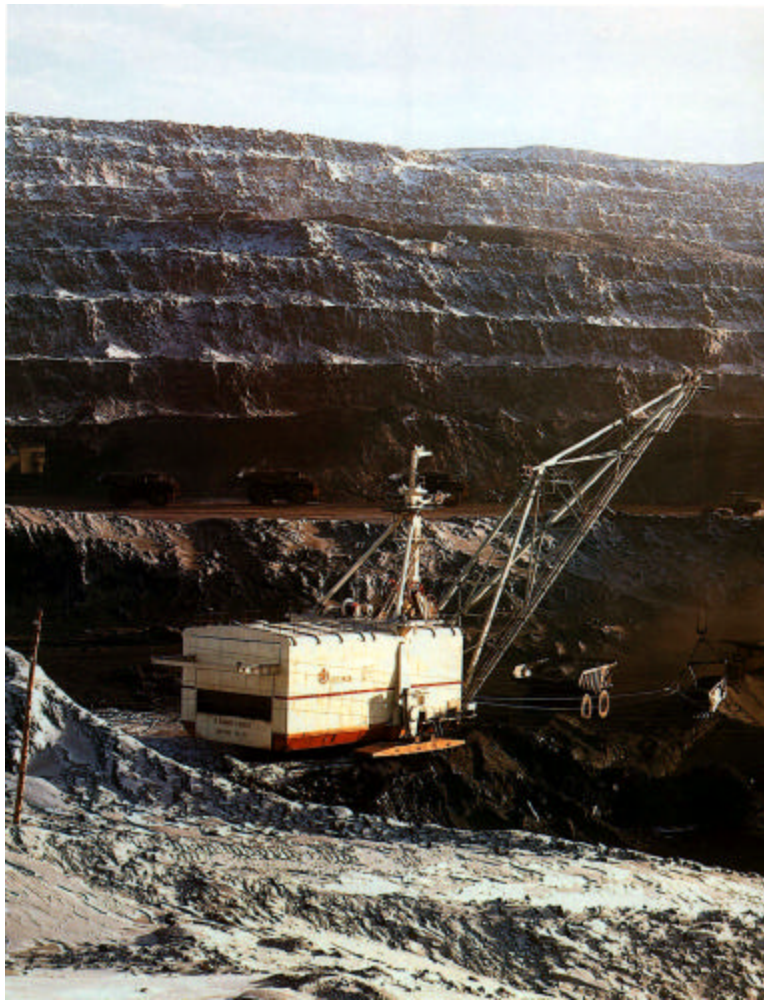


Figure 1. Chernogorsky strip mine, located in the high volatile bituminous (Coal mark D) Permian Chernogorskoye coal deposit, Krasnoyarsky district, Khakassiya region, Minusinsky coal basin, Russia. Photo by Mikhail Povarennykh, Vernadsky State Geological Museum.

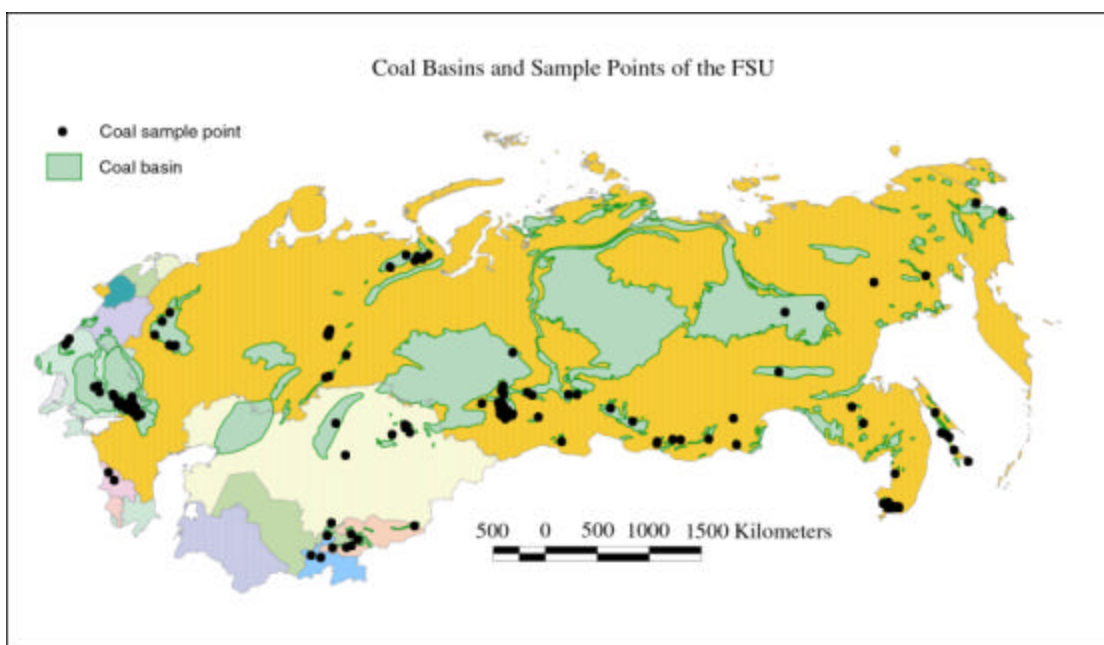
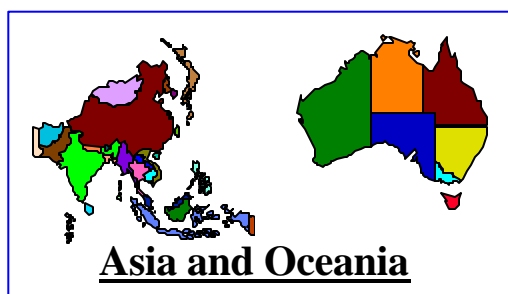


Figure 2. Map showing the coal basins and sample points of the Former Soviet Union.

References: Knapp, Ron, 2000, Environmental Challenges for Coal: Seminar on Environmentally Clean Coal Technologies in the Russian Sector: Moscow, July 4-5, 2000, Reformugol Foundation.

World Coal Institute, 2000, World Coal Institute web site, www.wci-coal.com

Country Status



Australia — A proposal for obtaining samples from the Australian coal industry to be analyzed for the WoCQI database has been submitted by collaborators in CSIRO Exploration and Mining to ACARP. [Contact: Susan Tewalt (stewart@usgs.gov)]

Bangladesh — Trace element analyses on 41 coal samples collected in earlier USGS studies have been completed. Work continues on GIS cover of base data. [Contact: Bob Milici (rmilici@usgs.gov)]

Bhutan — Contact made with Dept. of Mines and Geology – awaiting response. [Contact: John SanFilipo (jsan@usgs.gov)]

P. R. China - Zheng Baoshan and colleagues at the Institute of Geochemistry have collected more than 300 coal samples to be shipped to the USGS soon. Additional samples have been obtained from various sources in China. Work is progressing on GIS layers. [Contact: Bob Finkelman (rbf@usgs.gov)]

India - An agreement with the Central Fuels Research Institute and the Geological Survey of India (GSI) is being reviewed by the U.S. State

Department. GIS layers (draft form) have been completed of coal field boundaries, political boundaries, drainage, etc. [Contacts: Peter Warwick (pwarwick@usgs.gov) & Bob Milici (rmilici@usgs.gov)] Eight samples from one lignite mine in western India have been collected and analyzed. [Contact: John SanFilipo (jsan@usgs.gov)]

Indonesia - Samples from eight Indonesian coal basins have been analyzed. Additional samples are being collected. Further research activities will be discussed after the analytical results are completed. [Contact: Bob Finkelman (rbf@usgs.gov)]

Japan - Analysis of the two Japanese coal samples provided by Japan Coal Corporation (JCOAL) has been completed. [Contact: Bob Finkelman (rbf@usgs.gov)]

South Korea - Analyses of the 11 coal samples provided by the Korea Institute of Geology, Mining & Materials from operating mines are being evaluated. A detailed map of Korea geology was digitized. Draft map of sample locations has been prepared. A study on coalbed methane is being proposed. [Contact: John SanFilipo (jsan@usgs.gov)]

Laos — Contacts are being initiated at both the Dept. of Mines and Geology and the National Electrical Transmission Plan. A large lignite mine is being planned. [Contact: John SanFilipo (jsan@usgs.gov)]

Malaysia — No attempt yet to obtain samples.

Myanmar — Awaiting response from Deputy Minister of Mines regarding sampling. [Contact: John SanFilipo (jsan@usgs.gov)]

Mongolia — The Department of Fuels and Energy has agreed to collect samples. [Contact: John SanFilipo (jsan@usgs.gov)]

Nepal —Department of Mines and Geology has been contacted- waiting for a reply. [Contact: John SanFilipo (jsan@usgs.gov)]

New Zealand – CRL Inc. has provided 10 samples for which analysis has been completed. Several additional samples have been received. [Contact: Bob Finkelman (rbf@usgs.gov)]

Pakistan - Progress on GIS maps continues. Compilation of previously unpublished analytical results is ongoing as GIS covers are being reviewed. [Contact: John SanFilipo (jsan@usgs.gov)]

Philippines - Eight coal samples from the Philippine Department of Energy, Coal and Nuclear Minerals Division have been received and submitted for analysis. [Contact: Bob Finkelman (rbf@usgs.gov)]

Taiwan - Analysis of the 4 coal samples from operating mines (collected by Louis Tsai, National Central University) has been completed. [Contacts: Bob Finkelman (rbf@usgs.gov)]

Thailand - Eleven samples have been received and are being analyzed. [Contact: Bob Finkelman (rbf@usgs.gov)]

Vietnam - Initial interest expressed, no recent response received. [Contact: Curtis Palmer (cpalmer@usgs.gov)]



Austria — Inquiry made to the director of the Geological Survey of Austria. [Contact: Ron Affolter (affolter@usgs.gov)]

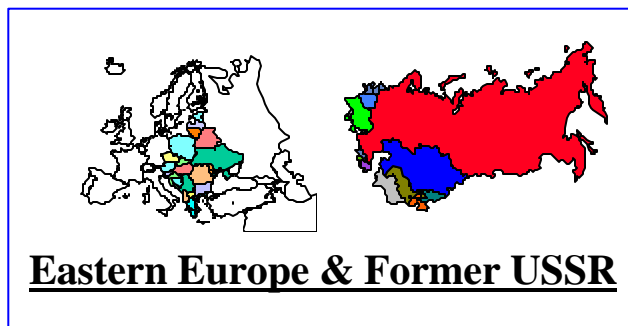
Belgium — Core samples representing 3 coal beds will be received in September. [Contact: Ron Affolter (affolter@usgs.gov)]

France -Three samples received and are being analyzed [Contact: Ron Affolter (affolter@usgs.gov)]

Germany - Samples expected this year from the Bundesanstalt for the Geowissenschaften und Rohstoffe. [Contact: Ron Affolter (affolter@usgs.gov)]

Greece - George Hatziyannis of the Institute of Geology and Mineral Exploration has offered to provide samples and analysis. [Contact: Ron Affolter (affolter@usgs.gov)]

Italy - Contacted, no response. [Contact: Harvey Belkin (hbelkin@usgs.gov)]



Albania - No attempt yet to obtain samples.

Armenia — The USGS conducted a Coal Exploration and Resource Assessment of

Norway — Three samples of coal from Spitsbergen have been received and analyzed. [Contact: Ron Affolter (affolter@usgs.gov)]

Spain - No attempt yet to obtain samples.

Turkey - Analyses of all delivered samples have been completed and sample locations verified in a GIS coverage. Data are now available in GEODE (<http://geode.er.usgs.gov>) See the feature article in WoCQI News 2 for more information. [Contact: Curtis Palmer (cpalmer@usgs.gov)]

United Kingdom - No attempt yet to obtain samples.

Armenia Project, funded by USAID. A number of coal quality analyses were obtained during this project (including archival databases) which will be entered into WoCQI. [Contact: Brenda Pierce (bpierce@usgs.gov)]

Bosnia - No attempt yet to obtain samples.

Bulgaria — Chemical data were obtained on 184 Tertiary coal samples from the Elhovo Basin. The USGS also collected 7 Miocene coal samples from the Chuckurovo strip mine in the Sofia Basin. [Contact: Mick Brownfield (mbrownfield@usgs.gov)]

Czech Republic - A proposal from Zednik Klika of Technical University in Ostrava has been accepted that would provide coal samples from the Czech and Slovakia Republics and Austria. Ron Affolter and Mick Brownfield (USGS) attended the “Ninth Coal Geology Conference Prague, 2001”, met with coal researchers and collected samples. [Contact: Ron Affolter (affolter@usgs.gov)]

Hungary - Analyses of 39 bench and face channel samples from five mines, representing a wide range of rank and ages of the coals, were completed in 2000. Many of the data were presented in a paper, “Quality of Selected Coals of Hungary,” given by Edwin Landis at the 25th International Technical Conference on Coal Utilization and Fuel Systems, and published in the proceedings volume of that conference. Two additional publications are in preparation; one concentrating on Ultimate and Proximate analyses and the other on the trace and minor elements. As a result of conducting the coal quality studies, researchers realized that there is a potential for coal bed methane resources in Hungary and are proceeding with additional investigations of that possibility. [Contact: Hal Gluskoter (halg@usgs.gov)]

Kazakhstan - No attempt yet to obtain samples – still seeking contact person [Contact: John SanFilipo (jsan@usgs.gov)].

Kyrgyzstan – Sixteen samples were collected from operating coal mines in the early 1990’s. Analyses have been published. [Contact: Hal Gluskoter (halg@usgs.gov)]

Macedonia - No attempt yet to obtain samples.

Poland - Discussions with the Polish Institute of Geology are still on hold. [Contact: Bob Finkelman (rbf@usgs.gov)]

Romania - The Geological Survey of Romania has provided coal samples and will

soon collect additional samples for WoCQL. [Contact: Bob Finkelman (rbf@usgs.gov)]

Russia - Samples from all the major coal deposits in the Kuzbas Basin were collected in cooperation with the Kemerovo Scientific Center of the Siberian Branch of the Russian Academy of Sciences and have been submitted for analysis. The USGS has a Memorandum of Understanding (MOU) with the Russian Academy of Sciences and is currently planning future work. A MOU is being developed with the Moscow State Mining University. See the feature article in this newsletter on the GIS CD-ROM for Russia. [Contact: Brenda Pierce (bpierce@usgs.gov) or Mick Brownfield (mbrownfield@usgs.gov)]

Serbia – More than 100 analyses of Kosovo Basin lignite samples have been completed. Contacts on hold.

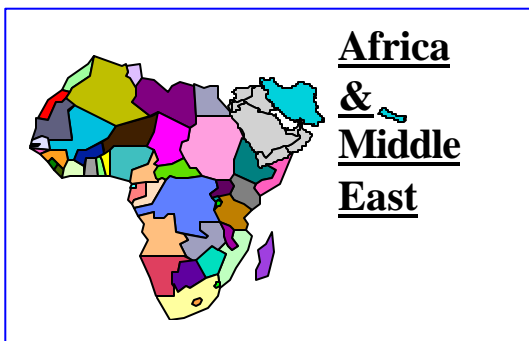
Slovakia - See Czech Republic.

Slovenia – Initial inquiry made to the Geological Survey of Slovenia. [Contact: John Repetski (jrepetski@usgs.gov)]

Tajikistan - Mike Gaffen, consultant to the USGS, has made contact with the Tajikistan coal sector. [Contact: Brenda Pierce (bpierce@usgs.gov)]

Ukraine – Plans are proceeding for the first of two NATO-sponsored visits to Donetsk to investigate coals in the Donbas region, in collaboration with Dr. Boris Panov and his colleagues at Donetsk State Technical University. During this visit, coal samples will be collected by Allan Kolker, and mining-impacted water samples will be collected by Edward Landa (both of USGS). Analytical results for 8 reconnaissance samples already provided by researchers in Donetsk are available. [Contact: Allan Kolker (akolker@usgs.gov)]

Uzbekistan - No attempt yet to obtain samples.



Botswana - No attempt yet to obtain samples, although the South African Bureau of Standards may help obtain samples. [Contact: Bob Finkelman (rbf@usgs.gov)]

Egypt - Initial interest expressed, no further response. [Contact: Bob Finkelman (rbf@usgs.gov)]

Iran - Initialized contact with the Geological Survey of Iran and also with the National Iranian Steel Company. [Contact: John SanFilipo (jsan@usgs.gov)]

Morocco — Contacted Mr. M. Sadiqui (Directeur de la Geologie, Ministere de L'Energie et des Mines), who expressed willingness to participate in WoCQI through his offices and those of Mr. Abdelhaq Bennani (Directeur des Mines, Dept. de l'Energie et des Mines). [Contact: John Repetski (jrepetski@usgs.gov)]

Mozambique — Contacts in South Africa will collect samples. [Contact: Bob Finkelman (rbf@usgs.gov)]

Nigeria - Several contacts have been made. We are waiting for responses. [Contact: Titus Onuoha (tituso@usgs.gov)]

South Africa — The South African Bureau of Standards will soon be providing WoCQI with splits of several hundred coal samples. They will be performing proximate analysis, volatile carbon and total sulfur determinations. On selected samples they will conduct petrographic analyses. [Contact: Bob Finkelman (rbf@usgs.gov)]

Swaziland - Contacts in South Africa will collect samples. [Contact: Bob Finkelman (rbf@usgs.gov)]

Tanzania — Three samples have been received and are being analyzed. [Contact: Bob Finkelman (rbf@usgs.gov)]

Zambia - Analysis of 5 coal samples has been completed and a report is being prepared. Additional samples will be provided. [Contact: Bob Finkelman (rbf@usgs.gov)]

Zimbabwe — Contact established, samples are expected. [Contact: Bob Finkelman (rbf@usgs.gov)]



Canada - Data for about 50 samples received from Geological Survey of Canada. Locations for these non-confidential data are now being collected. [Contact: Linda Bragg (lbragg@usgs.gov)]

Greenland - Initial contact made with the Geological Survey of Denmark and Greenland, but awaiting further response. [Contact: Susan Tewalt (stewart@usgs.gov)]

Mexico - Several contacts made. Waiting for response. Available digital geologic data on coal occurrence and mines has been collected. A coalbed methane study is proposed for the state of Coahuila. [Contact: Fiorella Simoni (fsimoni@usgs.gov)]

U.S.A. - Analyses of approximately 15,000 coal samples have been completed. About half of the data may be obtained through the USGS Web page (<http://energy.er.usgs.gov/products/databases/coaqual/intro.html>) or from a published CD-ROM. [Contact: Linda Bragg (lbragg@usgs.gov)]

Argentina - Seven samples from several coal mines are being analyzed. Collection of paper maps for GIS has been started. [Contact: Earl Brooks or Bob Finkelman (rbf@usgs.gov)]

Brazil - Wolfgang Kalkreuth, Universidade Federal do Rio Grande do Sul, provided 39 samples from 3 coal fields (Leao, Candiota, Santa Terezinha). The results of the analyses provided the basis to select 20 samples for low-temperature ashing and SEM analysis. [Contact: Jason Willett (jwillett@usgs.gov)]

Chile - Three samples have been received and analyses have been completed. A GIS file of coal-bearing formations is complete. Other digital GIS data (culture and topography) have been collected. A project on coalbed methane is being proposed in collaboration with the Chilean University. [Contact: Peter Warwick (pwarwick@usgs.gov)]

Colombia - A total of sixteen samples have been received from InGeoMinas and submitted for analysis; results of two samples have been completed. GIS digitization of the geology is complete and available geologic digital information is being compiled. [Contact: Peter Warwick (pwarwick@usgs.gov)]

Peru - Analysis of nine coal samples collected by Earl Brooks (USGS contractor) have been completed. Collection of digital GIS geologic and cultural data is ongoing. [Contact: Earl Brooks or Bob Finkelman (rbf@usgs.gov)]

Venezuela - Compilation of GIS coal occurrence and mines (plus already digital cultural and topographic information) is underway. The National Institute of Geology and Mineralogy has collected samples. [Contact: Peter Warwick (pwarwick@usgs.gov)]

Antarctica - CRL of New Zealand has provided 16 coal samples. [Contact: Bob Finkelman (rbf@usgs.gov)]

We still need your help!

Contacts are still being sought for the following coal-bearing countries: Malaysia, Vietnam, Austria, Italy, UK, Albania, Bosnia, Kazakhstan, Macedonia, Slovenia, and Egypt. If you know any individuals who may be interested in collaborating, please email their names to rbf@usgs.gov. We thank those persons who have recommended contacts.



Upcoming Conferences

2001

When

Sept. 24-26
Sept. 23-26
Sept.30-Oct.5
December 3-7

What

Coal Quality: Global Priorities
The Society for Organic Petrology
International Conf. On Coal Science
Pittsburgh International Coal Conf.

Where

Reston, VA USA
Houston, TX USA
San Francisco, CA USA
Newcastle, Australia

Who

rbf@usgs.gov
[David Glick,xid@psu.edu](mailto:David.Glick@psu.edu)
lockhart@netl.doe.gov
lruppert@usgs.gov

How To Register for the Coal Quality: Global Priorities Conference

Send this form and check in US\$ drawn on a bank having offices in the USA to Coal Quality: Global Priorities, AER Enterprises, 12 Redcoat Dr., East Brunswick, NJ 08816-6207, USA. Please indicate your preferences for the Short Courses, Breakout Sessions and field trips. The conference fee covers admittance, refreshment breaks, the Buffet (Monday evening the 24th), the field trip and a CD with all available papers and posters.

Registration: \$150 prior to August 15, 2001, \$200 thereafter.

Registration Fee (US \$150 per person prior to August 15, 2001) US\$ _____ Registration Fee (US \$200 per person after August 15, 2001) US\$ _____

For Hotel accommodations, more information or for wire transfer instructions, please contact Arnold Pelofsky, Conference Coordinator, at :

Telephone (732) 254-6930 **Fax** (732) 254-6812 **E-mail:** aerenter@home.com Cancellation Policy: Registration fee not refundable. Substitutions can be made at any time.

Arrival Date / Flight _____

Departure Date / Flight _____

Name _____

Spouse's Name (if coming also) _____

Title _____

Company _____

Street Address _____

Street Address _____

City _____ Postal Code _____
Country _____
Telephone _____
Fax _____
e-mail _____

_____ Yes, I plan to attend the buffet Monday night.
_____ Yes, I want to visit the MIRANT coal-burning power plant Thursday morning.
_____ Yes, I want to visit Washington, D.C. on Thursday afternoon, September 27th.

Short Courses (please indicate highest preference as 1, lowest as 4):

Health Impacts of Coal: Should We Be Concerned? _____
Coal Quality Characterization _____
Modes of Occurrence of Trace Elements in Coal _____
The Use of ASTM Standards _____

Breakout Sessions (please indicate highest preference as 1, lowest as 6):

Global Coal Characterization Protocols _____
Development of Modern Coal Quality Databases _____
Environmental Aspects, Including Air and Water Quality Issues _____
Coal Reserve Characterization and Beneficiation _____
Characterization of Coal for Byproduct Use and Disposal _____
Characterization of Coal for Technological Performance _____